RECORDS IN HIGH SPEED.

Development of Speed Coequal With That of Safety.

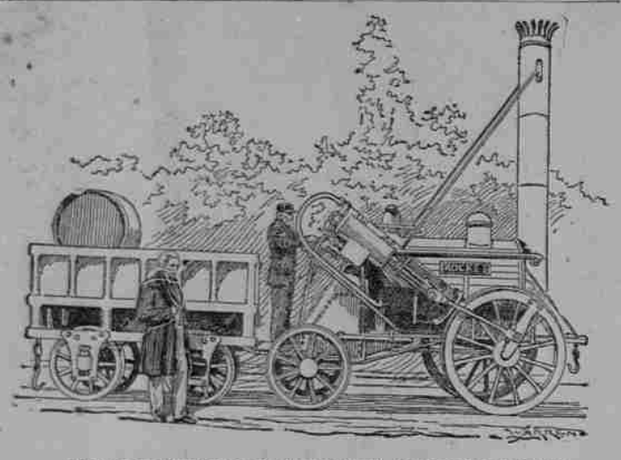
THE REMARKABLE RECORDS.

Great Evolutions in the Power of Locomotives and Steamships.

Horses and What They Have Accomplished in Running and Trotting—The Best Records on the Track—Rowing, Yachting and Bicycling.

NEW YORK, July 3.—It may be true that the race is not always to the swift, but it is also true that the nations that have laid out the best roads and built the fastest ships have been dominant since the dawn of history.

The development of the present high rates of speed has taken place entirely within the present century. The first passenger railway was operated between Stockton and Darlington, England, in 1825, a Stephenson locomotive being used. The road was twelve miles long, and the trip one way was made in two hours.



GEORGE STEPHENSON AND THE ROCKET, AS ORIGINALLY BUILT.

When it was predicted that the enormous rate of twelve miles an hour might some time be attained, the suggestion was promptly frowned down. When the Liverpool and Manchester railway was opened in 1829, the famous locomotive Rocket made thirty miles an hour on her trial trip, ran regularly at a rate of twenty-five miles, and occasionally when behind time reached a thirty-five mile speed.

In 1828 Peter Cooper of New York built a queer little locomotive which made a trial trip at Baltimore. Mr. Cooper himself handling the throttle. She made thirteen miles an hour average speed, and spurted to eighteen, and Mr. Cooper had to keep down the safety valve with his own hand to keep enough steam up. The use of this engine was not continued. She was only a fraction above one horse power, but her trial demonstrated that the tracks of the Baltimore & Ohio, which had been built by Mr. Cooper, were suited to the steam locomotive. In 1829 the Stourbridge Lion, an English built machine, was tried at Honesdale, Pa., found to be too heavy for the tracks and so abandoned. In 1831 the Mohawk & Hudson railroad, now a part of the New York Central system, began to use steam over its rails. The first train run was drawn by the DeWitt Clinton, and is now shown in duplicate at the World's fair. The famous locomotive, John Bull, was started on the Camden and Amboy in 1832, and is now a part of the Chicago exhibit of the Pennsylvania road. Both these engines were worked regularly at about 18 to 20 miles an hour, and the development of speed from that time was rapid.

Speed records have never been carefully kept by the railroads, but at least forty years ago the "mile a minute" rate had been reached in more than one instance.

The best regular run for a long distance is now made by the famous Empire State express, which runs daily on the New York Central railroad, from New York to Buffalo, a distance of 439½ miles in 8 hours and 40 minutes. This calls for an average speed of 52¾ miles an hour, and of course for daily dashes that are much faster. The train rarely reaches Buffalo behind the schedule, though on some days it has had to make up as much as half an hour of lost time. Its recent phenomenal performances began on May 9 of the present year, shortly after the much talked of engine 999 was put in commission. On that day the train had lost 25 minutes when it reached Syracuse; no phenomenal speed was made between Syracuse and Rochester, but from Rochester to Buffalo, sixty-nine miles, the average speed was more than a mile a minute, the time between stations being 68 minutes. The five miles between Looneyville and Grimesville were made in 3¾ minutes, and one mile between Grimesville and the Forks in 35 seconds, or faster than 102 miles an hour. Singularly enough on the same day a heavy train on the Pennsylvania covered the ninety-two miles between Philadelphia and New York in 100 minutes. On May 11, 999 broke her own record, doing a mile in 32 seconds, a speed which continued for an hour would reach 112½ miles.

The best recorded single mile before the Empire State's recent performances was made by an engine on the Philadelphia & Reading road, in 1891, which did a mile in 29¾ seconds, a little faster than 90½ miles an hour.

HOW MODERN ENGINES ARE MADE.

The development of high railroad speeds has been brought about through the perfection of the principles adopted in Stephenson's Rocket, in which were the essential features of the double cylinders, the multi-flue boilers and the exhaust draught. To this must be added the general but steady improvement of the roadbed, or as the English call it, the "permanent way," and the more perfect construction of engines.

In the engines of the Empire State express the extra grate surface is got by lengthening the fire-box, which is placed between the drivers. Most fast English engines have but one pair of drivers, while American engines have two. Advantage is claimed for each plan, of course, but the fact is, probably, that each is best for the conditions it has to meet.

It is now only a question of time and improvement of roadbeds when most railroads will run far faster regular trains than have hitherto been operated. This is true whether electricity is introduced on long lines of rail or not, for outside of three or four of the trunk lines the rails are not heavy enough, nor the ballast good enough, nor the lines straight enough to warrant the highest rates of speed attainable by the present locomotives. There is no doubt that locomotives may be operated by electricity at as great speed as by steam, for it is only a question of revolution of drivers and economy of fuel.

THE GROWTH OF THE STEAMSHIP.

There have been far more radical changes in the application of steam power to locomotion on the water than on the land. The first working steamboat was built by Robert Fulton in 1807, as all the world knows, and river navigation developed rapidly. Ocean navigation by steam was not accomplished, however, for several years after that time.

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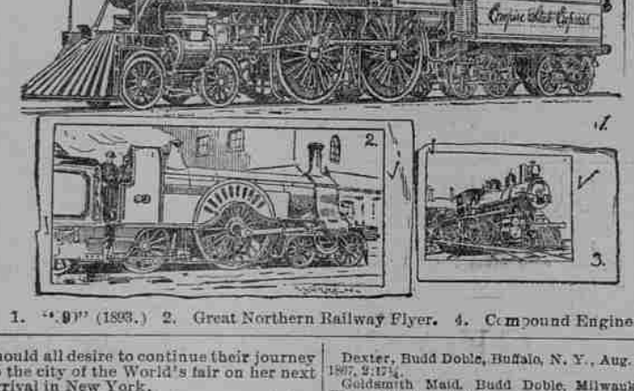

1. The Original "Grasshopper" Engine. 2. Winan's Crab. 3. De Witt Clinton Train, 1831.

THE SPEED OF HORSES.

Of all contests of speed for amusement those of horses are undoubtedly the most popular. Running races have always been the favorite form of horse speeding in England and on the continent, and trotting has never secured a foothold in any of the English colonies. In the United States it has had its entire development and that during the last fifty years.

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1. "999" (1893.) 2. Great Northern Railway Flyer. 4. Compound Engine.

This course, being 300 miles longer than the Queenstown course, the Fuerst Bismarck has almost as good a record as the Paris. It is not possible in the space at command to more than allude to the recent development of speed in naval vessels, or the magnificent work that has been done on long voyages by the ships that ply on the Pacific ocean between San Francisco and China, or by the vessels of the "P. & O," and other lines that ply between European ports and the East Indies.

These figures are all for westward voyages, and take no note of the time made by the German and French ships. The record over the Southampton route (eastward) is held by the Fuerst Bismarck, which made the voyage in July, 1892, in 6 days, 11 hours and 59 minutes. Her fastest westward trip was made in April of the same year in 15 minutes less.

pared concerning her, but one example must suffice; allowing fifty passengers to the car it would take two trains of seven cars each and one of eight to carry her full complement of passengers, if they should all desire to continue their journey to the city of the World's fair on her next arrival in New York.

The increased speed of ocean vessels has been brought about by the substitution of the screw for the side wheel, the compound or double engine for the single, iron for wood, and steel for iron in hull construction, the triple for the double engine, the double for the single screw, improved boilers and furnaces and increased power from time to time. It is of course folly in these days to say that the development of anything has reached its maximum, but there must be a limit to the shortening of the time on the transatlantic ferry, and we may reasonably look for inventive genius to turn itself in the direction of further coal economy and perhaps the application of some power other than steam, rather than to continued efforts for greater ocean speed.

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Dexter,	Budd Doble,	Riverside Park, Boston,	July 30, 1857,	2:19.
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Nancy Hanks,	Budd Doble,	Terre Haute, Ind.,	Sept. 28, 1892,	2:04.

The rapid reduction of time during 1892 was undoubtedly due to the introduction of the kite-shaped track, in which much more of the course is straight than in the old round or oval tracks and the so-called "bicycle" sulky, in which pneumatic tires and ball bearings are used. Sunol's time, 2:08¾, is still the best with the ordinary sulky and it is hardly likely that under similar conditions Nancy Hanks, though a wonderful mare, could have bettered the time of Maud S. To no man in America does the trotting turf owe so much as to Robert Bonner, though, when he bought a record breaker, he never allowed the animal to trot again for money. But he has devoted years of time and thousands of dollars to the breeding of fast trotters, and his study of the horse's foot has led to far more scientific shoeing and consequent increase of trotting speed than was before practiced.

The pacer is nearly allied to the trotter, but there has not been the same interest in pacing contests as in trotting, nor have the records been kept so carefully. Last year, however, much interest was aroused in the minds of all horsemen by the wonderful pacing time of 2:04, made on September 29 by the bay gelding Mascot, and it is likely that attempts to break this record at this gait will be made during the present year. The stallion record for trotting is held by Stamboul at 2:07½.

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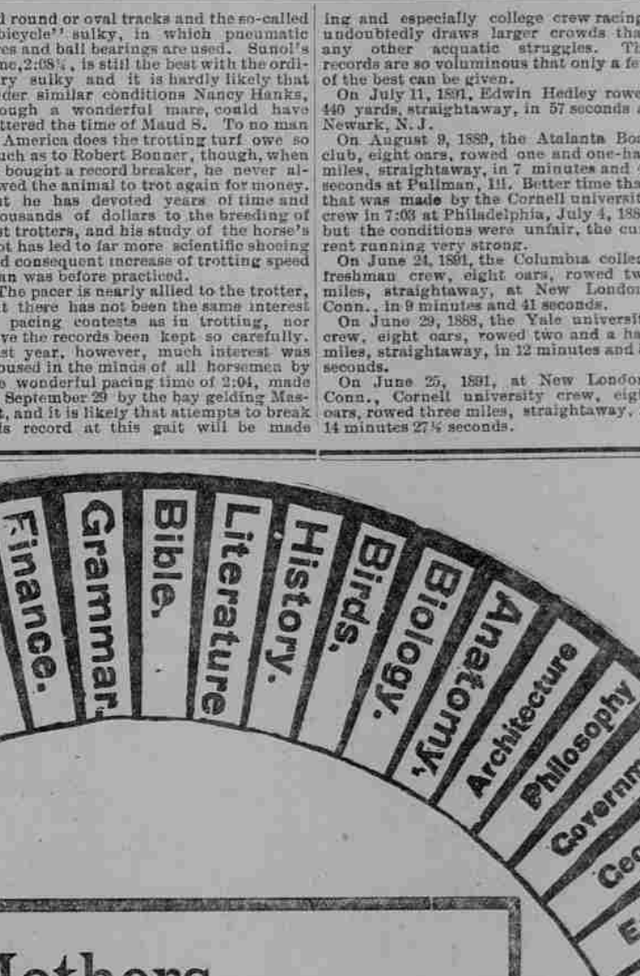

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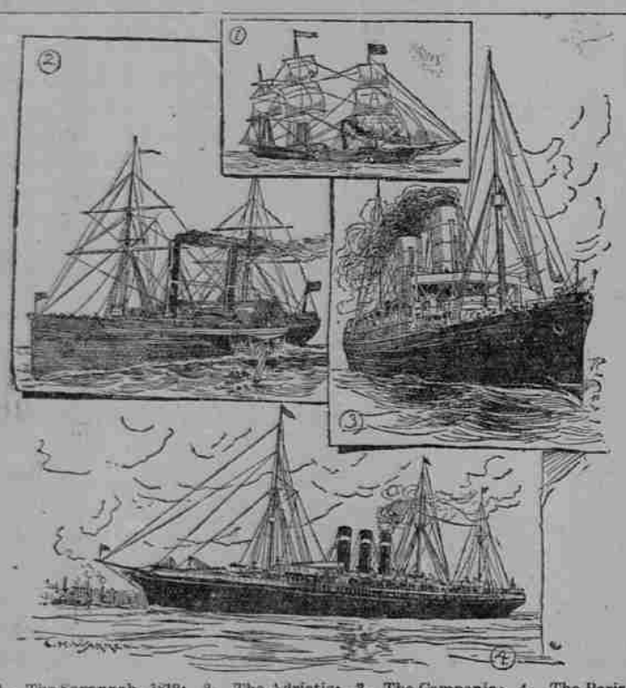
The best bicycle records are equally voluminous. They have all been made within recent years, of course. The first mile record on the ordinary high wheel was made in October, 1877, in 5 minutes and 2 seconds, by W. R. Pitman, and this was gradually reduced to 2 minutes 25 3-5 seconds, which speed was attained September 15, 1890, by W. Windle at Peoria, Ill. On the safety wheel Windle made a mile in 2 minutes 22 2-5 seconds September 8, 1891. On September 10 of the same year A. A. Zimmerman duplicated this record at Springfield, Mass. On October 7, 1891, a mile was made in 2 minutes 15 seconds by Windle at Springfield. H. C. Tyler made a standing mile in 2:08 4-5.

In the noble sport of yachting, both sail and steam, America and England hold the palm. There are many yachts and much sailing thereof in the waters of both Germany and France, but the boats of neither of these nations are equal to the Yankee and English craft. The mere mention of the old America and the numerous international races that have been sailed for the queen's cup, first won by her and now held in this country, is enough to raise the enthusiasm of every one who has ever seen a contest of white-winged yachts. It is expected that there will be another struggle for this famous cup during the coming autumn and all true sportsmen will be glad to see the best boat bear it away in triumph.

I. D. MARSHALL.



1. The Savannah, 1819; 2. The Adriatic; 3. The Campania; 4. The Paris.

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There is also much interest in running, but it would take pages of this essay to give the record. H. M. Johnson made the fastest 50 yards record, 5¼ seconds, in New York, Nov. 22, 1884. James Quirk made the best 75 yards record at Park Hill, Canada, in 7¼ seconds, Oct. 30, 1888. Wendell Baker holds the 80 yard record made July 1, 1886, at Boston, in 8 seconds. H. M. Johnson again holds the American 100 yard record made at Cleveland, Ohio, July 21, 1886, in 9 4-5 seconds. W. G. George holds the best one mile record made in London, England, August 23, 1886, in 4:12¾. William Lang holds the best two mile record made at Manchester, England, August 1, 1883, in 9:11¾.

There is not space to even mention the records made in long distance matches at running and walking.

The best bicycle records are equally voluminous. They have all been made within recent years, of course. The first mile record on the ordinary high wheel was made in October, 1877, in 5 minutes and 2 seconds, by W. R. Pitman, and this was gradually reduced to 2 minutes 25 3-5 seconds, which speed was attained September 15, 1890, by W. Windle at Peoria, Ill. On the safety wheel Windle made a mile in 2 minutes 22 2-5 seconds September 8, 1891. On September 10 of the same year A. A. Zimmerman duplicated this record at Springfield, Mass. On October 7, 1891, a mile was made in 2 minutes 15 seconds by Windle at Springfield. H. C. Tyler made a standing mile in 2:08 4-5.

In the noble sport of yachting, both sail and steam, America and England hold the palm. There are many yachts and much sailing thereof in the waters of both Germany and France, but the boats of neither of these nations are equal to the Yankee and English craft. The mere mention of the old America and the numerous international races that have been sailed for the queen's cup, first won by her and now held in this country, is enough to raise the enthusiasm of every one who has ever seen a contest of white-winged yachts. It is expected that there will be another struggle for this famous cup during the coming autumn and all true sportsmen will be glad to see the best boat bear it away in triumph.

I. D. MARSHALL.